Claims

1. A direct electrodynamic linear drive comprising a drive coil system composed of coils arranged in a row alongside each other on an elongated ferromagnetic core, which coil system is able to be supplied with a switched exciting voltage, and a ferromagnetic tube fitting around the drive coil system, a plurality of permanent magnets being arranged on the inner side of the said tube in a row alongside each other in the longitudinal direction of the tube, the core being provided with drive coil system and designed as a stator and the tube provided with the permanent magnets being designed as an armature.

2. The direct linear drive as set forth in claim 1, wherein the tube is arranged in a sliding manner in a longitudinal duct in a housing, the drive coil system extending into such longitudinal duct from one end thereof.

3. The direct linear drive as set forth in claim 1, comprising a non ferromagnetic tube extending along radial inner faces of the permanent magnets and at least one support element arranged on the elongated core, said support element being adapted to slide or roll along the bore face of the guide tube on motion of the armature.

4. The direct linear drive as set forth in claim 1, wherein the radially magnetized permanent magnets fit

around the drive coil system and more especially are made up of radially or diametrally magnetized magnet segments or magnet shells.

5. The direct linear drive as set forth in claim 1, wherein the guide tube and the permanent magnets have a round, oval-like or prismatic cross section.

6. The direct linear drive as set forth in claim 1, wherein the housing has integrated in it an electronic regulating and/or control system and/or power system for electrically supplying the drive coil system and/or an electrically operated detecting means for the armature.

7. The direct linear drive as set forth in claim 1, wherein the cylindrically wound drive coil system has one or more strands, and in the case of there being several coil strands such strands are placed in sequence with axially alternating directions of winding on the core.

8. The direct linear drive as set forth in claim 7, wherein the width of a coil of the drive coil system is equal to the width of a permanent magnet divided by the number of coil strands.

9. The direct linear drive as set forth in claim 7, comprising an electronic or mechanical commutating means for the coil strands in accordance with their respective position in relation to the permanent magnet of the armature and wherein said drive coil system has a plurality of strands.

10. The direct linear drive as set forth in claim 1, comprising a displacement measuring system integrated in

the housing, the drive coil system being more particularly designed in the form of a displacement measuring system.

11. An electrodynamic direct linear drive comprising a drive coil system composed of coils arranged in a row alongside each other on an elongated ferromagnetic core, which coil system is able to be supplied with a switched exciting voltage, a permanent magnet arrangement designed in the form of an armature and made up of a plurality of permanent magnets placed alongside one another in a longitudinal direction, such arrangement being able to be slid in relation to winding system, the drive coil system also being a component of a displacement measuring system for the armature, more particularly as set forth in claim 10, which has the drive coil system located in circuit as a differential choke system since regions having different iron saturation in the core, such saturation being due to permanent magnets of the armature, cause changes in inductance and owing to the motion of the armature are correspondingly shifted and wherein a processing and evaluating means is provided for ascertaining the inductance variations of the inductance parts of the differential choke system and from this the position of the armature.